

CLAIMS

1. A player hockey stick shaft comprising:

an elongated one-piece wall forming a titanium or titanium alloy hollow  
tube having an upper end and a lower end adapted to receive a player  
hockey stick blade therein.

2. The shaft of claim 1 wherein the titanium or titanium alloy has an elastic  
modulus greater than 13 million psi.

3. The shaft of claim 2 wherein the titanium or titanium alloy has a yield  
strength above 50,000 psi.

4. The shaft of claim 3 wherein the wall has a thickness in the range of .020  
to .045 inches.

5. The shaft of claim 4 wherein the titanium or titanium alloy has a yield  
strength above 70,000 psi.

6. The shaft of claim 3 wherein the wall has a thickness in the range of .025  
to .035 inches.

7. The shaft of claim 3 wherein the wall has a length in the range of 45 to 58 inches.

5 8. The shaft of claim 1 wherein the titanium or titanium alloy has an elastic modulus greater than 15 million psi.

9. The shaft of claim 8 wherein the titanium or titanium alloy has a yield strength above 50,000 psi.

10 10. The shaft of claim 9 wherein the wall has a thickness in the range of .020 to .045 inches.

11. The shaft of claim 10 wherein the titanium or titanium alloy has a yield strength above 70,000 psi.

12. The shaft of claim 10 wherein the wall has a thickness in the range of .025 to .035 inches.

13. The shaft of claim 1 wherein the wall has a length in the range of 45 to 58 inches.

14. The shaft of claim 1 wherein the titanium or titanium alloy has a yield strength above 50,000 psi.

5 15. The shaft of claim 1 wherein the titanium or titanium alloy has a yield strength above 70,000 psi.

16. The shaft of claim 1 wherein the wall has a thickness in the range of .020 to .045 inches.

10 17. The shaft of claim 1 wherein the wall has a thickness in the range of .025 to .035 inches.

15 18. The shaft of claim 17 wherein the tube is substantially rectangular in cross section and has a width and a thickness; and wherein the wall has a stiffness requiring a force ranging from 70 to 120 pounds applied across the thickness of the tube at a midpoint between the upper and lower ends of the wall to bend the wall to a one-inch deflection at the midpoint.

20 19. The shaft of claim 18 wherein the wall has a length ranging from 45 to 58 inches; and wherein the wall has a weight ranging from 250 to 450 grams.

20. The shaft of claim 1 wherein the titanium or titanium alloy is of an alpha, a near-alpha, an alpha-beta or a highly-aged beta type.

5 21. The shaft of claim 1 wherein the wall includes a hosel portion adapted to receive the blade and extending upwardly from the lower end; and wherein the wall has a first thickness adjacent the upper end and a second thickness above and adjacent the hosel portion which is less than the first thickness.

10 22. The shaft of claim 21 wherein the wall tapers inwardly and downwardly from adjacent the upper end to adjacent the lower end.

23. The shaft of claim 22 wherein the wall is stepped to define the first and second thicknesses.

15 24. The shaft of claim 1 wherein the wall has an outer surface to which a composite material is connected; and wherein the wall has a thickness in the range of .010 to .040 inches.

20 25. The shaft of claim 24 wherein the titanium or titanium alloy has an elastic modulus greater than 13 million psi and a yield strength above 40,000 psi.

26. A player hockey stick shaft comprising:

an elongated titanium or titanium alloy core having an upper end and a lower end adapted to connect to a player hockey stick blade; and  
a composite material encasing the core.

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27. The shaft of claim 26 wherein the titanium or titanium alloy has a yield strength above 40,000 psi.

28. The shaft of claim 27 wherein the titanium or titanium alloy is of an alpha, a near-alpha, an alpha-beta or a beta type.

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29. The shaft of claim 26 wherein an intermediate structure is disposed between the core and the composite material.

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